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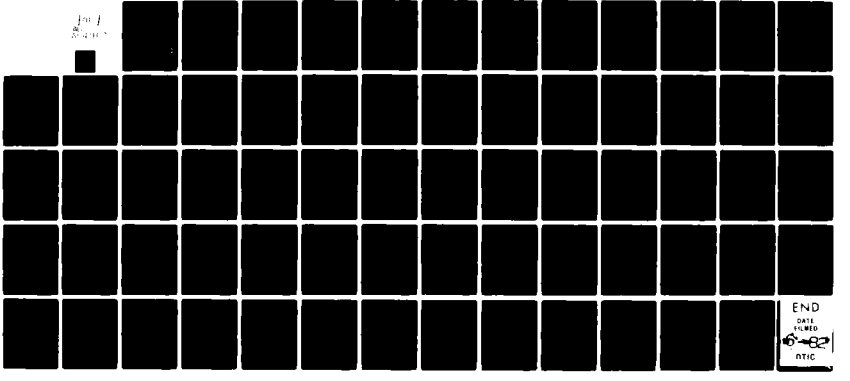

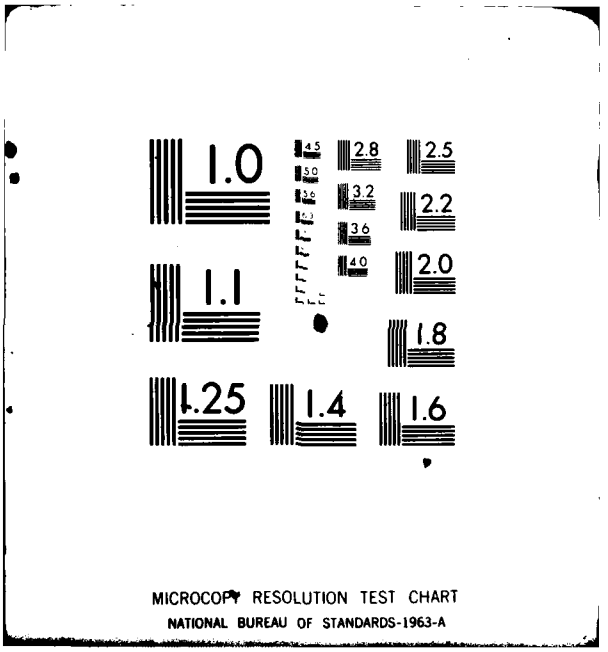
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Managers' perceptions of subordinates' performance, causes (attributions) of subordinates' performance, and leader behaviors employed toward subordinates were examined from the standpoint of cross-situational consistency versus cross-situational specificity in leader-subordinate dyads. Cross-situational consistency would be indicated if managers' perceptions of performance, attributions, and leader behaviors were stable over different stress situations, whereas cross-situational specificity would be indicated if these same

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20. perceptions indicated reliable variation, as a function of stress situations. Empirical results for 377 Navy managers provided strong support for cross-situational specificity. Results are discussed in relation to prior research, generated by interactional theory on consistency versus specificity of responses across situations, and in relation to research and developmental needs in leadership, attribution theory, and performance evaluation.

Cross-Situational Specificity in Managers' Perceptions of Subordinate Performance, Attributions, and Leader Behaviors

A currently popular perspective on leadership focuses on mutual dependencies and exchanges of influence between a leader and each of his/her subordinates (Hollander & Julian, 1969), which has been operationized empirically by studying leader-subordinate dyads (cf. Cashman, Dansereau, Graen, & Haga, 1976; Dansereau, Graen, & Haga, 1975; Graen, 1976; Graen & Ginsburgh, 1977; Graen & Schiemann, 1978). While few studies of dyads employ statistical procedures that allow for inferences of reciprocal causation (Greene, 1975; James, 1981; Sims, 1977), the dyadic studies do appear to indicate that (a) leaders and subordinates influence each others' perceptions, attitudes, and behaviors; (b) leaders adopt different behavioral styles toward different subordinates; and (c) the factor most strongly associated with a leader's actions toward a subordinate is the performance of that subordinate.

A recent surge of attribution studies helps to clarify the influence of subordinate performance on leader behavior. These studies typically view leaders' attributions of subordinate performance as mediating the subordinate performance--leader behavior relation, and attempt to identify the "naive" causal theories, including attribution errors, that leaders use both to explain a subordinate's performance and to decide upon a response to the performance (Green & Linden, 1980; Green & Mitchell, 1979; Goodstadt & Kipnis, 1970; Ilgin & Knowlton, 1980; Ilgin, Mitchell, & Fredrickson, 1981; Kipnis, 1976; Knowlton & Mitchell, 1980; McFillen, 1978; Mitchell & Kalb, 1981; Mitchell & Wood, 1980; Rosen & Jardee, 1974). For example, it has been shown that leaders tend to attribute poor performance by a subordinate to factors internal to that subordinate (e.g., ability, effort, mood), especially if the poor performance results in negative outcomes. Leaders also tend to employ more extreme controlling

and punitive behaviors if the poor performance is attributed to lack of effort rather than to lack of ability. Attributions of poor subordinate performance to internal factors may reflect one component of the fundamental attribution error (Ross, 1977), which is that observers (leaders) tend to attribute the poor performance of actors (subordinates) to internal, personal dispositions rather than to external, environmental factors. Extremeness of response is discussed below.

With the exception of a few field studies (cf. Kipnis & Costineo, 1969; Kipnis, Silverman & Copeland, 1973), attribution research in leadership has generally been conducted in artificial settings, using either laboratories or hypothetical scenarios. The need exists not only to extend this research to naturalistic settings, but also to incorporate more up-to-date attribution models. In regard to models, most attribution studies in leadership have employed the dimensions of stable-unstable and internal-external to categorize attributions (cf. Green & Mitchell, 1979). Weiner (1979) recommended recently that a third dimension of "controllable-uncontrollable" be added to the taxonomy. The importance of this addition is easily demonstrated inasmuch as it provides an explanation for the findings that leaders employ more extreme negative responses toward subordinates when they attribute poor subordinate performance to effort rather than to ability. Stronger negative responses resulting from effort attributions likely reflect the leader's beliefs that (a) the low level of effort was "intentional" on the part of the subordinate, (b) the subordinate's level of effort is "controllable" by the leader, and (c) the use of control and punishment will increase the subordinate's level of effort. Attributing poor performance to ability has none of these connotations because ability is not subject to control by either a subordinate or a leader (Weiner, 1979). In fact, attributions of poor performance to lack of ability result in different leader behaviors, such as information giving, consideration, and transfer to a less

demanding task (cf. Goodstadt & Kipnis, 1970; Kipnis & Costineo, 1969; Knowlton & Mitchell, 1980).

In summary, two needs for research have been proposed, namely (a) to examine relations between leaders' attributions of subordinate performance and leader behaviors in naturalistic settings, and (b) to employ an attribution model that includes a dimension for controllability. One objective of this study is to address these needs. If we were to follow conventional experimental designs for field research, the operationalization of the study would be straightforward. However, we will now introduce a third need that not only deviates from conventional designs but also raises questions about assumptions underlying the substantive understanding of leadership and the approaches for studying leader-subordinate dyads. We refer here to the need to test the prevailing assumption that leader behaviors within dyads achieve a condition of "cross-situational consistency". To illustrate this concept, several authors have stated that the behaviors of leaders and subordinates in dyads tend to reach an equilibrium and to stabilize over time and across situations (cf. Dansereau et al., 1975; Davis & Luthans, 1979; Zahn & Wolf, 1981). For example, Dansereau et al. (1975) reported that leaders tended to develop a consistent pattern of relations with subordinates in the form of (a) leader exchange relations (influence without authority) for "in group" subordinates, and (b) supervision relations (influence based primarily on authority) with "out group" subordinates. The implication is that once leaders have accommodated to the resources offered by a subordinate (e.g., loyalty, compliance, performance--Zahn & Wolf, 1981), the behavior toward that subordinate tends to become consistent and homogeneous (Zahn and Wolf also discussed conditions which could disrupt consistency).

The assumption of cross-situational consistency in leader behavior has not in general been stated explicitly in field studies on leader-subordinate dyads. Nevertheless, its pervasiveness is easily illustrated by reviewing the

customary research design. Subordinates and/or leaders are typically asked to furnish descriptions of the leader's style toward each subordinate on a set of dimensions, such as consideration and initiation of structure. The items in each dimension are rated only once by each rater; no attention is given to possible differences in behaviors represented by a dimension for the same leader and subordinate in different work situations, such as conditions of high versus low stress. Clearly, this popular design makes the implicit assumption that one set of ratings per dimension of a leader's actions toward a subordinate is representative of a uniform set of actions in all situations. Moreover, any possible variation in leaders' actions due to differences in situations is tested using a factorial or between-group design (e.g., different leaders and subordinates in high and low complexity jobs) rather than a repeated measures design (e.g., the same leaders and subordinates in each type of task encountered in a particular job). Here again we see the assumption that once leaders and subordinates have accommodated to one another, the leader behaviors (and subordinate behaviors) within the dyad are consistent over situations encountered in a particular type of job. A similar design has been adopted in experimental studies in the sense that variation in leader behaviors due to situational influences is almost exclusively tested using between-group, factorial designs rather than within-group, repeated measures designs.

Forces for Cross-Situational Consistency

A number of forces are at work that reinforce the assumption of cross-situational consistency in leader behavior. Seven forces are suggested here. First, a strong tendency exists to view work situations in consistent, homogeneous terms. For example, a job has one technology and one set of job characteristics (cf. Hackman & Oldham, 1975, 1976); a role has stable properties of ambiguity, conflict, and overload (cf. Katz & Kahn, 1978); and a work context has a constant operational structure (e.g., formalized, standardized, and centralized--cf. James & Jones, 1976). Such a view leads to, or at least reinforces, the belief that

a work context for a leader and his/her subordinates is consistent and stable. Second, it has been argued that stable behavioral dispositions exist over a wide range of diverse situations (cf. Stagner, 1977). The rationale here is that behavior will tend to be consistent even though situations differ. Third, a related point of view is that even if behaviors differ as a function of situation, an aggregate (mean) of behaviors over diverse situations provides a reliable index of stable behavioral dispositions because behavior in a particular situation is likely to involve a number of idiosyncrasies due to unreliable, random events (cf. Epstein, 1979, 1980). The logic, therefore, is to aggregate behaviors over situations in order to cancel out random error and to obtain a reliable (stable) estimate of a "true score" on the behavior(s) of interest (Rushton, Jackson, & Paunonen, 1981).

Three additional forces appear to be forms of attribution and cognitive errors, and may reflect biases of research subjects as well as researchers. The fourth force is that people tend to perceive their own and other's behavior as consistent and stable across situations and over time (cf. Bem & Allen, 1974; Block, 1977; Epstein, 1979). Reasons for perceived consistency and stability include the need for predictability, implicit theories that assume stability, and cognitive generalizations to many behaviors based on a few stable attributes such as intelligence (cf. Epstein, 1979). The fifth and sixth forces are essentially elaborations of the fourth force; they are (a) discounting of inconsistent information, such as when poor performance by a generally good performer is attributed to unstable, uncontrollable, external factors (e.g., luck) (cf. Kelly, 1972); and (b) distortions in cognitive information processing, long-term memory, and recall, such as selective attention to consistent and expected behaviors, routine or automatic information processing, and recall of schemas (cognitive categories) that reflect only modal behavioral impressions rather than behaviors specific to particular and perhaps diverse situations (cf. Feldman, 1981; James, Hater, Gent, & Bruni, 1978; Nisbett & Wilson, 1977).

Finally, the seventh force is the pragmatic consideration that incorporating repeated measures on the same variables for the same leaders and subordinates across situations increases the complexity of the research. Time and resources allotted for research, subject fatigue, and perceived redundancy on the part of subjects are relevant concerns that mitigate against repeated measures designs.

Cross-Situational Specificity

The seven forces above are not exhaustive of all forces, and apply to many types of person perceptions in addition to perceptions of leader behavior. For example, different work situations within a single work context are almost never considered as possible mediators or moderators of performance in performance evaluation research. It follows that if researchers view subordinate performance as consistent and homogeneous, and subsequently view leaders' behaviors as functions of their perceptions and attributions of subordinates' performance, then the leader behaviors and attributions will also be viewed and measured as if they were consistent and homogeneous. But what if a subordinate's performance varies? A few experimental studies using assigned student leaders (Barrow, 1976; Herold, 1977; Hill & Hughes, 1974) and hypothetical scenarios (Hill, 1973) suggest that leaders do in fact vary behaviors toward the same subordinate or group of subordinates as functions of variations in subordinate performance, group performance, or task requirements. If the effect of these studies on later research is a valid indicator, then it is obvious that they have had little impact on research in leadership. We believe that this is unfortunate, and will attempt to build a case that variation in leader behavior is an important concern. We then propose a study that tests the cross-situational consistency hypothesis against an alternative hypothesis of "cross-situational specificity" in leader behavior, as well as subordinate performance and leaders' attributions of subordinate performance.

Suppose that we admit that many jobs and roles have inherent inconsistencies

and variations. Stress furnishes a case in point. The same job may have conditions of high quantitative overload (achievable objectives but insufficient time to accomplish them; Katz & Kahn, 1978) at times, conditions of high qualitative overload (difficult objectives but sufficient time for their accomplishment) at other times, and conditions of underload at still other times. Now, suppose that a particular subordinate tends to have a high level of performance in quantitative overload conditions, a low level of performance in qualitative overload conditions, and a moderate level of performance in underload conditions. If a supervisor is aware of these differences in the subordinate's performance, and if the subordinate performance → leader attribution → leader behavior model (Green & Mitchell, 1979) is viable, then it seems reasonable to expect differences in scale scores (means on samples) for both the supervisor's attributions of the subordinate's performance and the supervisor's leader behaviors as stress situations vary. We might also expect perceptual measures of subordinate performance, attributions, and leader behaviors to be reliable in each type of stress situation if supervisors have had multiple opportunities to observe their own behavior and that of the subordinate in each stress situation (Kenrick & Braver, 1972). It is, therefore, not necessary to aggregate perceptions over stress situations to achieve reliability. In fact, if true scores on the performance, attribution, and leader behavior variables vary as a function of stress situation, then not only does aggregation of scores over situations mask reliable differences in true scores, but also the aggregate performance, attribution, and leader behavior scores will be biased descriptors of at least some stress situations (cf. James, 1982 for logic on aggregation bias).

Based on the rationale above, we predict that (a) performance levels of the same subordinates will vary as a function of different stress situations, (b) leaders' attributions of subordinates' performance will vary as a function of different stress situations, and (c) leaders' behaviors toward subordinates

will vary as a function of different types of stress situations. The term "cross-situational specificity" is employed to refer to these hypothesized variationsin performance, attributions, and leader behaviors for the same subordinates and leaders over diverse types of stress situations.

Research Design

The cross-situational specificity hypothesis has a theoretical base in the concept of "situational specificity" that is currently popular among interactionists and the subject of considerable debate in personality research (cf. Endler & Magnusson, 1976; Epstein, 1979, 1980; Kenrick & Braver, 1982; Kenrick & Stringfield, 1980; Magnusson & Endler, 1977; Mischel, 1973; Rushton et al., 1981; Stagner, 1976, 1977). Endler and Magnusson (1976, p. 961) defined situational specificity as "inconsistency in behavior across situations that differ in character." The recommended test for situational specificity in personality research is a comparison of the rank ordering among individuals on the same behavioral variables (reflecting a latent personality variable) across diverse situations (Epstein, 1979). Specificity of behavior is indicated if the rank orders vary, which is to say that correlations among repeated measures on the same behaviors are not high. It is also noteworthy that the allowance for reliable differences in rank order in each situation connotes reliable within-situation, individual differences. This in turn implies that situational specificity is not a situationist position. That is, the situationist position also predicts that behaviors vary as a function of situation, but attributes these differecnes "almost exclusively to situational variables" (Epstein, 1979, p. 1099), and regards within-situation variation as error. Situational specificity as conceived by interactionists such as Endler and Magnusson (1976) not only allows for reliable within-situation individual differences, but also attributes these differences to continuous, reciprocal interactions between individuals and situations. This rationale appears especially well-suited to leader-subordinate [illegible] which are viewed as reciprocal interaction

processes and which assume reliable within-situation differences for different leader-subordinate dyads.

Differences in rank order are used to test for cross-situational specificity in subordinate performance, leader attributions, and leader behaviors in the present research. However, unlike research in personality, we believe that tests of differences in level--such as differences in means on the same leader behavior over different situations in a repeated measures design--are important in leadership research. This is because differences in the use of a behavior such as coercive power indicates meaningful differences in leadership style. It suggests also that an aggregate description of coercive power over all situations will not be representative of some situations. In addition, we propose a third test of cross-situational consistency versus specificity. The rationale for this test is that changes in leader behaviors as a function of situation imply that the correlates of leader behaviors (i.e., subordinate performance, leader attributions--cf. Green & Mitchell, 1979) change as a function of situation. This may be thought of as "situational moderation", where, operationally, the (unstandardized) regression weights assumed by subordinate performance and attribution variables in regression equations designed to predict leader behaviors should differ significantly as a function of situation, if cross-situational specificity is a viable hypothesis. Conversely, nonsignificant differences in regression weights, or homogeneous equations, suggest consistent and stable correlates of leader behaviors over situations.

Summary

The primary objective of this study is to test the ubiquitous assumption that subordinate performance, leaders' attributions of that performance, and leaders' behaviors toward subordinates are cross-situationally consistent. We suggest that they are not consistent, and have offered cross-situational specificity as an alternative hypothesis. We predict, therefore, differences in rank order and means for performance, attributions, and leader behaviors as a function of situation, and accompanying differences in regression equations for

the regressions of leader behaviors on performance and attributions. The research was conducted in field settings, using natural leader-subordinate dyads and a three dimension attribution model.

Method

Sample

The sample was comprised of 377 Navy managers from four Naval aircraft carriers. Sixty-five of the managers were officers, with ranks varying between Warrant Officer and Commander. The remaining 312 managers were Petty Officers to Chief Petty Officers (E-5 to E-9). The managers were selected for participation using the following procedure. The ship's management was asked to select randomly 100 managers for participation, given the following contingencies: (a) each manager was at least a third class Petty Officer, (b) each manager supervised at least two subordinates, and (c) each manager had been in his/her present assignment at least six months. 388 of a possible 400 managers agreed to participate in the study. Eleven participants were later deleted in edits of the data (e.g., excessive missing data), resulting in a participation rate of 94%.

The majority of managers (95%) were located in operational/technical positions (e.g., engineering, operations, aircraft maintenance, communications, weapons, and supply). The remaining managers performed administrative duties. These occupational characteristics generally reflect the ratio of line to staff management positions on aircraft carriers. The mean age of the sample was 29 years. These managers had served in the Navy an average of 10 years, and had been in their present assignments approximately two years. Mean educational level was 13 years (one year of college). The sample was comprised primarily of males (97%) and Caucasians (89%).

Data were obtained by means of questionnaires, which were administered on board the ships in groups of 10 to 20 managers while the ships were in a United

States port. A member of the research team was present to conduct all administrations. Participation in the study was voluntary; participants were guaranteed confidentiality, and all participants signed a privacy act statement prior to participation.

Procedure

The design and instruments for the study were developed in concert with Naval personnel (officers and chief petty officers) in a command responsible for leadership development and training. This developmental process took place over a seven-month period; the roles that evolved were that the investigators set broad objectives (e.g., an examination of cross-situational specificity) and then assisted the Naval personnel in the construction of instruments that were believed to be applicable and meaningful for Navy subjects. Several pilot tests of prototype instruments were conducted on Navy line managers prior to the major data collection effort. A decision reached early in this process was that different (types of) stress situations should be used as the basis for testing cross-situational consistency versus specificity in leadership. The Naval personnel were able to describe many personal experiences (when in ship commands) of variations in their own and others' leader behaviors as a result of different stress situations. They also believed that reacting successfully under different types of stress is where leadership is most critical to a Navy command. Thus, an initial step in the developmental process was to generate a taxonomy of stress situations for Navy managers aboard ships. With the assistance of reviews of the stress literature (cf. Beehr & Newman, 1978; Katz & Kahn, 1978; McGrath, 1976; Schuler, 1980), the Naval personnel developed a seven category taxonomy of stress, which is presented in Table 1. It was recognized that the stress situations (categories) were not independent and that several situations could occur simultaneously. Nevertheless, the situations were regarded as meaningful by the Naval personnel for use by Navy managers. Pilot studies with the latter group supported this

opinion. In addition, each of the stress situations was regarded by the Naval personnel and the subjects in pilot studies to have occurred with sufficient frequency to provide a reliable basis for describing their own leader behaviors as well as the performance of their subordinates.

Insert Table 1 about here

Following this developmental process, a questionnaire instrument was constructed for Navy managers to measure subordinate performance, attributions of performance, and self-reports of leader behaviors. Here again the investigators set broad guidelines, such as describing the three dimension attribution model (Weiner, 1979), but the primary burden for item development was placed on the Naval personnel. Several versions of a questionnaire were constructed and pilot tested on Navy managers from ships. It is noteworthy that the size of the questionnaire was limited by subject fatigue and perceived redundancy, as well as by the facts that administration of the questionnaire on ships was limited to one wave of data collection while the ship was in port, and one hour of administration time per manager. Working within these constraints, and following pilot studies, it became obvious that trade-offs were necessary. In particular, subject fatigue, the time limit, and the opportunity for one wave of data collection precluded having a manager describe all his/her subordinates on all items for all seven stress situations.

The final design that satisfied the constraints above, was acceptable to subjects in the pilot tests, and furnished a basis for accomplishing the research objectives was as follows. Each Navy manager selected and described two individuals under his/her direct supervision, namely the best overall performer (best performer) and the poorest overall performer (poorest performer). For the best performer, the manager was asked to select the situation from the seven stress

situations in which the best performer generally had his/her highest level of performance. This is referred to as the "best performer, highest performance condition", or simply the "best-highest" condition. The manager was also asked to select the stress situation in which the best performer generally had his/her lowest level of performance. This is referred to as the "best performer, lowest level of performance (best-lowest) condition". For each of these two conditions, the managers described the subordinate's performance, attributions of that performance, and the leader behaviors used in supervising the subordinate.

A similar process was employed for each manager's poorest performer. This resulted in a "poorest performer, highest performance (poorest-highest) condition", and a "poorest performer, lowest performance (poorest-lowest) condition". Performance, attribution, and leader behavior descriptions were obtained for each condition using the same items as those employed in the two conditions for the best performers.

Tests for cross-situational consistency versus specificity. The tests of rank order were based on correlations between repeated measures on the same variables for the highest and lowest performance conditions. For example, scores on subordinate performance in the best-highest condition were correlated with scores on subordinate performance in the best-lowest condition. A separate correlation was computed for the poorest-highest and poorest-lowest condition, thus furnishing two estimates of consistency of rank order for subordinate performance. The same procedure was followed for the attribution and leader behavior variables. These correlations are "consistency coefficients" and therefore a form of reliability. Cross-situational consistency is indicated by a high correlation (reliability), whereas low to moderate correlations indicate, but do not prove, cross-situational specificity. That is, low to moderate correlations

could be due to differences in the rank-order of true scores, which indicates cross-situational specificity, or to random error in the measurements. The random error alternative can be disconfirmed in a number of ways. These include high reliability estimates for variables in each condition, significant differences in level between conditions, significant correlations and multiple correlations within conditions, and significant differences in regression equations between conditions. For reasons explained later, we relied primarily on the latter three procedures using the logic that valid prediction and significant differences (also a form of validity) imply reliability (Lord & Novick, 1968).

Tests of level (means) were based on repeated measures statistics. Multivariate and univariate tests of means were conducted on the performance, attribution, and leader behavior variables for the best-highest versus the best-lowest conditions, and for the poorest-highest versus the poorest-lowest conditions. Significant differences connote cross-situational specificity, whereas nonsignificant differences imply cross-situational consistency.

The third test of consistency versus specificity was based on comparisons of unstandardized regression weights for regression equations constructed to predict leader behaviors. To illustrate the logic of the test, consider the following two regression equations (all variables are in deviation form):

$$\underline{y_H} = \underline{b_{y_H x_{1H}} x_{1H}} + \underline{b_{y_H x_{2H}} x_{2H}} + \ldots + \underline{b_{y_H x_{jH}} x_{jH}} + \ldots + \underline{b_{y_H x_{JH}} x_{JH}} + \underline{e_H} \quad (1)$$

$$\underline{y_L} = \underline{b_{y_L x_{1L}} x_{1L}} + \underline{b_{y_L x_{2L}} x_{2L}} + \ldots + \underline{b_{y_L x_{jL}} x_{jL}} + \ldots + \underline{b_{y_L x_{JL}} x_{JL}} + \underline{e_L} \quad (2)$$

where:

$\underline{y_H}$ = a leader behavior measured in a highest (H) performance condition, such as the best-highest condition.

$\underline{y_L}$ = the same leader behavior measured in a lowest (L) performance condition, such as the best-lowest condition.

x_{jH} = the j^{th} (j=1,...,J) predictor (e.g., subordinate performance) of leader behavior, measured in the highest performance condition.

x_{jL} = the same j^{th} predictor measured in the lowest performance condition.

$b_{y_H x_{jH}}$ = the unstandardized regression weight for x_{jH}.

$b_{y_L x_{jL}}$ = the unstandardized regression weight for x_{jL}.

e_H and e_L = residual or error terms.

The empirical question is whether the $b_{y_H x_{jH}}$ (j=1,..,J) in Eq. 1 differ significantly from the $b_{y_L x_{jL}}$ in Eq. 2 for the same set of managers and subordinates. A significant difference indicates cross-situational specificity. Conventional homogeneity of regression tests (cf. Timm, 1975) for independent groups cannot be used here because the regression weights and errors in Eqs. 1 and 2 are correlated, which follows directly from the fact that the data in Eqs. 1 and 2 are based on repeated measures on the same subjects.

A homogeneity of regression test for "correlated regression weights" was developed specifically for this study. The development was simplified because a homogeneity of regression test had already been constructed for correlated regression weights in a sequential moderation design (James, Joe, & Irons, in press). The sequential moderation test assumes that the values on predictor variables (e.g., selection tests) remain constant, while the values on a criterion variable vary at different times of measurement. From a statistical standpoint, the only difference between the test required for this study and the sequential moderation test is that, in the present study, the values on the predictor variables are allowed to vary over conditions rather than to remain constant. Consequently, the equations presented in the James et al. (in press) article were rederived for nonconstant predictor scores.

The derivations are beyond the scope of this article. In summary form for two repeated measures, the test may be viewed as comprising a hypothesis matrix, Q_{Ho}, which has the form:

$$Q_{Ho} = (B_H - B_L)(B_H - B_L)', \quad (3)$$

and an error matrix, Q_E, which has the form:

$$Q_E = V_{B_H} + V_{B_L} - 2C_{B_H B_L} \quad (4)$$

In Eq. 3, B_H is the unstandardized regression weight vector for Eq. 1 (highest performance condition), and B_L is the unstandardized regression weight vector for Eq. 2 (lowest performance condition). In Eq. 4, V_{B_H} and V_{B_L} indicate variances of regression weights (the basis for computing standard errors), and $C_{B_H B_L}$ indicates the covariance among the regression weights (this term includes a component for the covariance among the errors).

Once values for Q_{Ho} and Q_E are computed, a multivariate significance test has the form:

$$\Lambda = |Q_E| / |Q_{Ho} + Q_E| \quad (5)$$

where the vertical lines indicate determinant values. Assuming a multivariate normal distribution for the differences in regression weights [i.e., $(B_H - B_L)$], the test given by Eq. 5 follows the U distribution with [2, J, $(n-1) - J$] degrees of freedom. J is the number of predictors and n is the sample size.

Instruments

As noted earlier, all data were based on the Navy managers' responses to a questionnnaire. Major domains of items used in the present study are described below. To set the stage for these descriptions, it is necessary to note that

the delicate balance between the constraint on administration time and the need to ask the same performance, attribution, and leader behavior questions repeatedly for different conditions required the use of trade-offs and limited the number of items that could be used. One trade-off was a decision that subordinate performance should serve primarily as a manipulation check and therefore only one measure of overall performance was obtained in each condition. This allowed the use of a larger number of attribution and leader behavior items. Even here, however, the number of items was restricted to critical concerns. While constructing the questionnaire, the Naval personnel were encouraged to focus on the most critical leader behaviors used by Navy managers to motivate and to control subordinates (cf. Oldham, 1976). This approach precluded satisfaction of some desirable psychometric criteria, such as generating a sufficient number of items to furnish high coefficient alphas for each of a set of leader behavior dimensions. On the other hand, the items were generated by Navy managers for Navy managers, and participants in the pilot studies indicated that important domains of leadership and attributions were addressed. Furthermore, it was possible to categorize most items in terms of existing leadership and attribution constructs. Finally, as discussed earlier, if analyses indicate significant validities and differences in means and regression equations, then it is axiomatic that the data are reliable.

Subordinate performance. After selecting their best performer, each manager was asked to read the descriptions of the seven stress situations (Table 1) and then identify (a) the stress situation associated with the best performer's highest level of performance, and (b) the stress situation associated with the best performer's lowest level of performance. The manager then rated the performance of the best performer in the highest and the lowest performance (stress) situations, using the item "Subordinate's overall performance in situation

with highest (lowest) level of performance". A six-point scale (1=Very low,..., 6=Truly exceptional) was used for rating purposes. The same procedure was used to obtain performance ratings for the poorest performer in that subordinate's highest and lowest performance (stress) situations.

Attributions. Following discussions of the Weiner (1979) three dimension attribution model, the Naval personnel agreed that the model was applicable for Naval managers. These personnel then attempted to generate critical attributions for each of the eight cells. Additional discussions and revisions based on the pilot tests resulted in the model shown in Table 2. This table is based on Weiner (1979, Table 2, page 7), as operationalized for Navy managers. The internal-external dimension refers to whether a manager attributes a subordinate's performance to characteristics/resources of the subordinate (internal) or factors external to the subordinate, including, in this context, contributions made by the manager (supervisor) completing the questionnaire. The stability dimension categorizes causes as invariant (stable) or variant (unstable). It is important to note that "stable" refers only to a specific condition in this study. For example, attributing performance to competence in the best-highest condition implies stability in that condition only.

Insert Table 2 about here

The controllability dimension refers to whether a cause is "subject to

volitional control" (Weiner, 1979, p. 6). For example, in the internal domain, Weiner considered ability (stable) and mood (unstable) to be uncontrollable. When constructing the attribution items, the Naval personnel agreed with these classifications, but substituted the words "competence" for ability and "attitude" for mood. (Attitude refers to interest in a particular task. It is a perception of affect more than effort, although effort and attitude were expected to be related.) For the internal, controllable cells, Weiner used typical effort (stable) and immediate effort (unstable). The Naval personnel regarded effort as generally unstable, and chose leadership skills of the subordinate as a critical controllable, stable attribute because a subordinate might consistently perform well or poorly as a leader in a particular stress situation. With respect to the four external cells, in accordance with Weiner, the uncontrollable, stable attribution was task difficulty. Unlike Weiner, luck was replaced by resources (manpower, equipment) available to the subordinate and time available to complete tasks in the uncontrollable, unstable cell. Finally, "your contributions as a supervisor" was considered the key controllable, stable attribution. Controllable in this case refers to controllable by the manager completing the questionnaire rather than the subordinate, although the performance of a subordinate could be regarded as a cause of a manager's contributions. This is consisent with Weiner (1979, p. 7), who suggested that the controllability of causes in a particular cell may be viewed from multiple perspectives (i.e., the actor and/or the observer), and that controllability is a function of "how far back one goes in a causal inference chain." No critical causes were constructed for the external, controllable, unstable cell (Weiner employed unusual help from others, which was not considered a critical cause by the Naval personnel).

The attribution items were presented to respondents in the form of statements, such as "The amount of <u>effort</u> provided by the subordinate", and "The <u>attitude</u> of the subordinate". The rating scale used for each attribution in each condition

was designed to assess both direction of causal influence and the degree of causal influence. Direction of causal influence refers to whether a causal factor helped or hurt (hindered) a subordinate's performance. No effect on performance was also an option. Given direction, the next question was the degree to which the causal factor helped or hurt performance. Prior research by Meyer (1980) was used as a guide to construct a nine-point scale which assessed degree and direction. That scale was considered to be unnecessarily long by participants in the pilot studies, and thus the following five-point scale was employed in the research:

-2	Hurt performance strongly	-1	Hurt performance	0	Had no effect	+1	Helped performance	+2 Helped performance strongly

Leader behaviors. A large number of leader behaviors was generated by the Naval personnel. Considerations of redundancy and fatigue on the part of subjects in the pilot studies resulted in a decision to use only 10 items, which were judged to be the most critical by the Naval personnel. The items selected could generally be categorized into existing leadership constructs, such as use of opportunities for influence (cf. Dansereau et al., 1975; James, Hater, & Jones, 1981; Vroom, 1960), dimensions of formal social power (cf. Kipnis & Cosentino, 1969; Kipnis et al., 1973), and consideration (cf. Schriesheim & Stogdill, 1975). The 10 items are presented below. Each item category has a descriptive designation and, in parentheses, the name of the construct used for the same or similar items in prior leadership research.

A. Use of Delegation and Participation (Opportunities for Influence)

1. Provide subordinate with opportunities to think and act on his/her own.
2. Seek subordinate's opinion about how to accomplish tasks.

B. Use of Rewards (Reward Power)

3. Use rewards (e.g., extra time off) to motivate subordinate.
4. Use praise and encouragement to motivate subordinate.

C. Use of Diagnostic and Corrective Talks (Persuasive Power)

5. Talk with subordinate to find out the reasons for his/her performance.

6. Discuss ways that subordinate could improve his/her performance.

D. Use of Close Supervision (Coercive Power)

7. Monitor subordinate to make sure that work was done properly.

8. Orally reprimand the subordinate.

E. Use of Explanation (Consideration)

9. Explain the reasons for your orders to subordinate.

F. Use of Assignment

10. Attempt to assign subordinate to a task at which he/she was better.

A five-point, Likert-type scale was employed for rating purposes. The scale was:

1. Not at all	2. To a small extent	3. To a moderate extent	4. To a great extent	5. To a very great extent

Position variables. Position variables reflect an individual's position or status in an organization, and have been shown to be related to environmental perceptions, including perceptions of leadership (cf. Jones & James, 1979; Newman, 1975). Two variables were used as predictors of leader behavior in the regression analysis, namely tenure (time in the Navy) and level (rank or paygrade). Data were also collected on other position variables (occupational specialty, time in present position) as well as demographic variables (age, education, race, sex). However, high correlations with tenure or level, low base-rates, or highly skewed distributions precluded their use in the analyses.

Stress variables. Participants from two of the ships (n = 166) were asked to describe each of the seven stress situations in Table 1 on 15 stress items. Given the extra burden this placed on participants, it was decided to obtain only

sufficient data for multivariate analyses. The "stress questionnaire" was administered last in the data gathering effort.

The 15 stress items were culled from interviews with Naval personnel and from the stress literature (see prior references). The items were presented in a semantic differential format, such as "High Pressure 1 2 3 4 5 Low Pressure". Principal component analyses of the 15 items for each of the seven stress situations, followed by tests of component invariance, identified two approximately invariant components. These components were labeled "Pressure" and "Uncertainty". Six items loaded on the Pressure component; these were High Pressure/Low Pressure, Not Stressful/Stressful (reflected), Important/Unimportant, High Demand/Low Demand, Tense/Not Tense, and High Consequences/Low Consequences. The five items that loaded on the Uncertainty component were Certain/Uncertain (reflected), Simple/Complex (reflected), Have Control/Helpless (reflected), Unstable/Stable, and Predictable/Unpredictable (reflected). Pressure and uncertainty have been regarded as two salient attributes of stress (cf. McGrath, 1976; Schuler, 1980), and thus the present results were generally consistent with prior discussions of the components of stress. However, we also found that, with one minor exception (the Personnel Problems situation, $\underline{\alpha} = .69$), the coefficient alphas ($\underline{\alpha}$) for the Pressure component were above .70 in all stress situations. For the Uncertainty component, however, only three estimates of internal consistency were $\geq .70$ (Underload, $\underline{\alpha} = .76$; Personnel Problems, $\underline{\alpha} = .70$; Emergencies, $\underline{\alpha} = .71$). In the other four situations, the $\underline{\alpha}$'s ranged from .53 to .64. Explanations of the variations in the alphas for Uncertainty are a potentially interesting subject, but not one we wish to pursue at this time. Our pragmatic decision was to delete Uncertainty from the analysis and to proceed with the Pressure component.

The Pressure component furnished a form of latent variable on which to compare the seven stress situations. Inasmuch as the loadings on the items varied somewhat across situations, the comparison was based on linear, unit-weighted

composite scores of the six Pressure items. A composite score was computed for each rater for each situation. The composite scores were then aggregated over raters in each situation to furnish a mean composite score per situation. Examination of these means indicated that the Underload stress situation was perceived as comparatively low in pressure [$\bar{X}$ = 14.96, SD = 4.77; the maximum possible composite score was 30). In contrast, the mean composite scores for the remaining six situations were relatively similar (range of means = 21.27 to 24.21, range of SDs = 3.66 to 4.23), and the mean of these means (22.58) indicated moderately high pressure. These results suggested that it was possible to use a dichotomous score to capture the differences among the seven situations on the Pressure composite. The scores on the variable were: 1=low pressure (i.e., Underload situation); 2=high pressure (i.e., the remaining six situations). This variable was used in later analyses to represent type of stress situation.

Results

The classification of subordinate performance in relation to stress situations is discussed briefly. This discussion is followed by the results of the three tests of cross-situational consistency versus specificity, beginning with tests of rank order, proceeding to tests of level, and concluding with tests of homogeneity of correlated regression weights. The presentations summarize highlights of the data, and statistical information not reported explicitly is available from the authors.

Classification of Subordinate Performance in Relation to Stress Situations

The dichotomous Pressure variable was used to represent the seven stress situations in this analysis. Results presented in Table 3 demonstrate that the managers tended to select a high pressure situation regardless of condition. This would be expected given that six of the seven stress situations were classified as high in pressure. On the other hand, an interesting reversal occurred in the pattern of responses for best and poorest performers.

Insert Table 3 about here

Comparison of the two highest performance conditions (conditions 1 and 3 in Table 3) shows that a high pressure situation was selected for 96% of the best performers and 60% of the poorest performers. This pattern reversed itself in the two lowest performance conditions (conditions 2 and 4), where 66% of the best performers and 80% of the poorest performers had their lowest level of performance in high pressure situations. In part, these results may reflect a form of social desirability bias in the sense that it is more socially desirable for a best performer to have his/her highest level of performance in the more critical high pressure situations, and his/her lowest level of performance in the comparatively less critical low pressure (Underload) situation. Managers appeared to be less inclined to follow a socially desirable pattern for their poorest performer, which is indicated even more strongly in the presentation of the mean ratings of performance.

Tests of Rank Order

The results of the first test of cross-situational consistency versus specificity are reported in Table 4. The correlations reflect the consistency of rank ordering among best (column 1) and poorest (column 2) performers in the highest and lowest performance conditions. As discussed earlier, the correlations are consistency coefficients and therefore a form of reliability. Consequently, the conventional criterion of $\geq .70$ was used as the cut-off for consistency; that is, a correlation $\geq .70$ indicated cross-situational consistency. Correlations less than .70 support, but do not prove, cross-situational specificity.

Insert Table 4 about here

Of the thirty-eight correlations shown in Columns 1 and 2, only five were .70 or above. The data clearly supported a cross-situational specificity hypothesis. However, one might argue that the correlations were superficially low because selection of extreme groups (i.e., best and poorest performers) resulted in restriction of the range on the variables. This potential contaminating factor was checked by (a) combining the best-highest sample with the poorest-highest sample to form a "combined sample" representing a "highest performance" condition (n=754), (b) combining the best-lowest sample with the poorest-lowest sample to form a combined sample representing a "lowest performance" condition (n equal to the same 754 subordinates), and (c) correlating the combined sample data in the highest performance condition with the combined sample data in the lowest performance condition. The correlations are reported in column 3 of Table 4.

Before interpreting these correlations, it is important to note that data shown in the next section of this report demonstrate large and significant mean differences between best and poorest performers in both the highest performance and lowest performance conditions. Thus, the correlations based on the combined samples of best and poorest performers in column 3 of Table 4 were not restricted in either the highest or lowest performance condition. Standard deviations on all items for both the original four conditions and the combined samples (see Table 5) support this conclusion. On the other hand, it is also noteworthy that correlations based on the combined samples may furnish a spuriously high estimate of cross-situational consistency because they are based on "extreme groups" of best and poorest performers rather than a random sample of all subordinates.

Insert Table 5 about here

Comparison of the correlations in column 3 with the correlations in columns

1 and 2 of Table 4, and the standard deviations in Table 5, suggested that restriction of range was indeed a factor for subordinate performance, attitude attributions, and effort attributions prior to combining samples. A partial restriction was also indicated for competence attributions, leadership attributions, and oral reprimands. No restriction was generally indicated for the remaining variables, although, with few exceptions, this does not connote similarity of correlations in Columns 1 through 3 in Table 4. Rather, for the leader behavior data in particular, the pattern of correlations suggested a greater degree of specificity for highest performers (column 1) in comparison to poorest performers (column 2)(correlations in column 3 for these variables generally represented an average of the correlations in columns 1 and 2). In other words, the degree of cross-situational specificity appeared to be moderated by type of performer.

The critical concern in the present study was that almost all the correlations computed on the combined samples indicated cross-situational specificity. Thus, even after biasing the results toward a finding of consistency by using an extreme groups analysis, the tests of rank order continued to support a specificity hypothesis. The question now is whether the indicated specificity was a function of reliable differences in true scores or random error in the data. The analyses reported below imply that the data were indeed reliable.

Tests of Level

As shown in Table 6, the cross-situational specificity hypothesis was supported by multivariate and univariate tests of means in the repeated measures analyses. The multivariate tests were based on the Hotelling correlated $\underline{T}^2$, and the univariate tests were based on the correlated $\underline{t}$-test. The $\underline{p} > .005$ level of significance was employed at the univariate level to protect the Type I error rate for each set of tests associated with a multivariate analysis. This significance level corresponds generally to the experimentwise significance level

divided by the number of variables tested (e.g., .05/10 leader behaviors = .005). A pooled error-term from the multivariate analysis was not used in the univariate tests, nor was any attempt made to combine samples in order to correct for restriction of range in the covariances in the error terms. Each of these factors results in a loss of power in the statistical tests. Nevertheless, a substantial majority of the tests was significant, and Type II error was of little concern. It should also be mentioned that univariate tests for attributions and leader behaviors were not independent in the sense that many of the within domain intercorrelations were significant. Correlations and intercorrelations of variables are reported in the next section of this report.

Insert Table 6 about here

Of initial importance in Table 6 is the manipulation check on subordinate performance (first row of univariate tests). Results indicated substantial differences for the best performers across conditions and for the poorest performers across conditions. Thus, managers did in fact perceive differences in performance for the same subordinates in different situations.

With respect to the attributions, of the three dimensions the internal versus external dimension furnished the most informative base for interpreting the univariate results following the significant multivariate tests. For example, larger differences were found among the means for the internal attributions than among the means for the external attributions. This, in part, was a function of the managers' tendencies to use more extreme scores on the internal attributions in the best-highest and poorest-lowest conditions. It perhaps also reflected greater attention on the part of managers to subordinates' personal influences on their performance in comparison to the influences of work context factors such as task difficulty, resources, and time (cf. Jones, 1979; Ross, 1977). The results for supervisor contributions were somewhat anomalous in

relation to the other external attributions inasmuch as all attributions for supervisor contributions, including those in the lowest performance conditions, were positive in sign. This is congruent with the concept of self-serving bias (Green & Mitchell, 1979), although the managers were significantly less likely to assume responsibility in the best-lowest and poorest-lowest conditions, as compared to the best-highest and poorest-highest conditions.

The results for leader behaviors were less dramatic than those for subordinate performance and internal attributions. That is, the multivariate and univariate tests of significiance indicated cross-situational specificity, but actual differences in item means were often not of large magnitude. Nevertheless, meaningful differences were obtained. With respect to the best performers, comparisons of means within and across the highest and lowest performance conditions suggested that managers tended to emphasize the use of influence opportunities and reward power to motivate subordinates. In terms of absolute magnitude, encouraging subordinates to act on their own (a form of autonomy) occurred more frequently than seeking subordinates' opinions (a form of participation), and use of praise and encouragement occurred more frequently than use of rewards.

Similar comparisons for poorest performers indicated that persuasive power and coercive power were key leader behaviors used by managers to motivate, or to control, subordinates. Opportunities for influence and reward power were also used with poorest performers, but not only were the means lower in comparison to best performers, but also greater specificity (i.e., variation between highest and lowest performance conditions) was indicated for these variables for best performers. The reverse was the case for poorest performers in regard to persuasive and coercive powers, where greater specificity generally occurred for poorest performers.

The interpretations above imply significant differences between best and

poorest performers. This was indeed the case. Multivariate and univariate comparisons were made between best and poorest performers in the highest performance condition and in the lowest performance condition, respectively. The results of these tests are shown in Table 7.

Insert Table 7 about here

The results in Table 7 are both a form of extreme, between groups analysis and a manipulation check. That is, the dyadic model predicts differences among leaders' perceptions of their behaviors toward their best and poorest performers (cf. James, Gent, Hater, & Coray, 1979). This implies differences in perceptions of subordinate performance and attributions for that performance. The data shown in Table 7 furnish strong support for these predictions and implications. Of particular interest were the findings that (a) larger differences occurred for internal attributions in comparison to external attributions, (b) managers were generally more likely to employ opportunities for influence and reward powers for best performers in comparison to poorest performers, and (c) persuasive power and coercive power were used more frequently for poorest performers in relation to best performers. These results corroborate interpretations offered for the results reported in Table 6, and both sets of results (Tables 6 and 7) imply reliability of the data.

Tests of Homogeneity of Regression Weights

The plan presented in the Procedure section indicated that separate homogeneity of regression tests would be computed for best performers and poorest performers. However, comparisons of (a) correlations among predictors, and between leader behaviors and predictors, in each of the four conditions with (b) correlations in the samples combined on the basis of level of performance (i.e., best-highest with poorest-highest and best-lowest with poorest-lowest) showed that (c) relations within the four separate conditions frequently suffered restriction of range. Thus, the decision was made to perform the regression analyses on the combined

samples. These are the same samples used in the tests of rank order (Table 4, column 3), and are again referred to as the highest performance condition (i.e., best-highest with poorest-highest) and the lowest performance conditions (best-lowest with poorest-lowest). Moreover, like the tests of rank order, the present analyses are a form of extreme groups analysis. The correlations and multiple correlations are therefore possibly overstated indicators of relations that might be expected in random samples. However, our primary concern was with tests of consistency versus specificity of unstandardized regression weights, which are less likely, if at all, to be biased by the use of extreme groups. (Technically, unstandardized regression weights are not influenced by restriction of range either. However, the analyses on the combined samples were reflective of results found for noncombined samples, and thus only the former results are reported here.)

We were also concerned with potentially serious multicollinearity problems resulting from high correlations among predictors, which would render meaningless the tests of homogeneity of regression weights, and the sheer number of regression analyses and homogeneity tests to be reported. The most serious source of multicollinearity was a pattern of high intercorrelations among the four internal attribution items (.54 to .72 in the highest performance condition; .45 to .65 in the lowest performance condition). This problem was resolved by combining the internal attribution items to form a composite labeled "internal attributions" (α's = .86 and .79 in the highest and lowest performance conditions, respectively). This composite had substantial correlations with subordinate performance, but, as we shall see, did not create a serious multicollinearity problem.

In regard to the number of regression analyses and homogeneity tests, we first conducted all analysis and tests for each of the 10 leader behavior items. Criterion composites were then computed for correlated leader behavior items from the same, or related, domains, and a second set of analyses and tests was

performed on the composites. While the multiple correlations for the leader behavior criteria were understandably somewhat higher for composites of leader behavior items in comparison to single items, the essence of both the multiple correlations and homogeneity of regression tests for the separate leader behavior items was captured by the analyses on the composites of leader behavior items. Thus, only the results for composite data are reported here. The composites, and estimates of relations among items included in the composites, were as follows: (a) opportunities for influence, a composite of the two influence items (intercorrelations equal to .49 and .37 in the highest and lowest performance conditions, respectively); (b) reward power, a combination of the two reward items (.45 and .38); and (c) control, a combination of the four items for persuasive power and coercive power (α's = .81 and .82). Explaining reasons for orders and reassignment were left as single items.

Correlations among the predictors and leader behaviors for the highest (lower triangle) and lowest (upper triangle) performance conditions are presented in Table 8. The set of predictors included the position variables tenure and level as well as a dichotomous variable designed to represent high (score of 2) versus low (score of 1) Pressure situations. (The low correlations between tenure and level [.17] reflect the fact that officers and enlisted personnel always vary in level, regardless of tenure.) Tests of nonlinearity and nonadditivity for tenure and level indicated no meaningful deviation from linearity and additivity.

Insert Table 8 about here

Problems were encountered for the Pressure variable. Pressure was included as a predictor because managers may be prone to employ different leader behaviors in high versus low stress situations. However, the correlations between Pressure and all other variables, including leader behaviors, were generally opposite in

sign for the highest versus the lowest performance conditions. While these sign reversals would provide strong support for our prediction of nonhomogeneity of regression weights and specificity, they were at least partially spurious. Spuriousness can be explained by the facts that (a) the mean performance for best performers was higher than that of poorest performers in both the highest and lowest performance conditions (see Table 7), while (b) best performers were more likely than poorest performers to receive a "2" (high pressure) in the highest performance condition and a "1" (low pressure) in the lowest performance condition (see Table 2). Thus, correlations with Pressure were contaminated by an interaction involving differential performance means for best and poorest performers assigned to high and low pressure situations. Pressure was therefore deleted from the regression analyses.

Unstandardized regression weights and multiple correlations (R's) for the predictions of leader behaviors are presented in Table 9. (Hierarchical or "step-up" regressions were also conducted to ascertain if, for example, attributions mediated the leader behavior-subordinate performance relations. The results of the full-rank analyses were essentially the same as the hierarchical analyses). By conventional standards, the R's were generally high for opportunities for influence and control, moderate for reward power and reassign, and low for explain orders. The potential multicollinearity problem due the high correlations between the internal attributions composite and subordinate performance was not in evidence. That is, the pattern of regression weights was consistent with the pattern of zero-order correlations, the weights did not appear to "bounce" (cf. Gordon, 1968; Werts & Linn, 1971), and standard errors for the weights were not large (cf. Johnston, 1972). Furthermore, the internal attributions composite had significant weights for both opportunities for influence and control in both the highest and lowest performance conditions. More interesting, however, were the findings that subordinate performance contributed significantly

to prediction in seven out of 10 possible equations, suggesting that the leader behavior-subordinate performance covariation was not altogether mediated by either internal or external attributions. In a quasi-causal sense, this suggested that performance had direct effects on leader behaviors, which disconfirms the popular subordinate performance → attribution → leader behavior model because this model allows only for indirect effects of subordinate performance on leader behavior. On the other hand, this interpretation is only suggestive inasmuch as this study was not designed to confirm or disconfirm causal models.

Insert Table 9 about here

It is interesting that managers' perceptions of their contributions as supervisors (variable 5) predicted a number of the leader behaviors. The regression weights were positive, indicating that perceived contributions increased as a function of the perceived use of a leader behavior. Aside from suggesting an internal consistency in how managers responded to the questionnaire, these results imply a cyclical interaction of the form: subordinate performance → attribution to contributions of the manager → manager's behavior → subordinate performance. This cyclical interaction in turn implies that an attribution factor external to a subordinate (i.e., managers' contributions) was perceived by the managers as a cause of the subordinate's performance. This result questions that component of the fundamental attribution error which suggests that others' (subordinates') behavior is usually attributed to internal factors of the others by observers (managers) (Ross, 1977). But then, attribution studies have seldomly considered the perceived effects of observers on actors, which is an integral part of leadership.

Turning now to the question of cross-situational consistency versus specificity, examination of the unstandardized regression weights for the highest

versus lowest performance condition (per criterion) indicated many differences, even though the R's were similar for four of the five criteria. (Similarity of R's does not connote similarity in the patterns of unstandardized regression weights.) The results of the tests for homogeneity of correlated regression weights, shown in Table 9, demonstrated that the unstandardized regression weights differed significantly for each of the leader behavior criteria. The data reported in Table 9 include the determinant values of the error matrix (Q_E) and the error matrix plus the hypothesis matrix ($Q_E + Q_{Ho}$); the values were computed using the equations presented earlier. The determinant values were quite small, a result of the fact that they were functions of products of a large number of decimal values. The lambda (Λ) values were also small, which is precisely the condition that should occur when multivariate tests are significant. Thus, the data in Table 9 indicate, without exception, significant differences between the predictor equations for leader behaviors in regard to comparisons between highest performance conditions and lowest performance conditions. This in turn suggests that the correlates of the leader behaviors were cross-situationally specific.

Insert Table 10 about here

To summarize, the results presented in this section indicated significant and meaningful prediction for three of the five leader behavior criteria, namely opportunities for influence, reward power, and coercive power. The hypothesis that the regression equations for leader behaviors would be cross-situationally specific was supported for all leader behavior criteria. Finally, the magnitudes of the multiple R's for three of the five leader behavior criteria and the constant pattern of significant differences among the regression weights for all leader behavior criteria suggest again that the data in this study

DISCUSSION

A common thread in the many historical approaches to leadership has been to view leader behavior in relation to aggregates of subordinates; that is, the style of the leader in relation to all subordinates (Kerr & Schriesheim, 1974). This view is not without support; many prior studies and recent studies have demonstrated some consistency of leadership style in relation to behaviors toward a group (cf. Bass, 1981; Greene & Schriesheim, 1980; Katerberg & Hom, 1981; Katz, 1977; Knight & Weiss, 1980; Lord, 1976; Lord & Rawzee, 1979). It is possible, however, to allow for some leader behaviors to be directed toward a group while allowing for other leader behaviors to be directed toward individual subordinates. The latter type of behavior has been shown many times in studies of vertical dyads(cf. Dansereau et al., 1975). The point here is that leader-group and leader-subordinate interactions are both important ingredients of leadership. Further, they do not appear to be mutually exclusive behaviors; rather, one could say that the dyadic relations, in comparison to leader-group relations, represent an additional degree of specificity (clarification) in the study of what it is that leaders do.

When viewed from this perspective, the present research contributes an additional degree of clarification to the study of leader behavior. That is, the results supported prior dyadic research inasmuch as leaders developed different dyadic relations with different subordinates, namely best performers versus poorest performers. An additional degree of specificity (clarification) was indicated by the findings that a leader's behaviors toward a particular subordinate differed significantly as a function of whether the subordinate was performing at his/her highest level (in relation to a stress situation) or poorest level. In other words, leader behaviors, as perceived by leaders, were cross-situationally specific. Cross-situational specificity was also found for leaders' perceptions of

performance and leaders' attributions of the causes of subordinates' performance. Subordinate performance and attributions have been regarded as key predictors of leader behaviors (cf. Green & Mitchell, 1979), and thus the finding of cross-situational specificity for these variables adds evidence to, as well as potential explanations for, cross-situational specificity in leader behaviors. Finally, the fact that the regressions of leader behaviors on subordinate performance and attributions also indicated cross-situational specificity furnishes a coherent system of empirical and logical support for cross-situational specificity in dyadic relations.

However, we must be careful not to overstate the results. As discussed above, the present results add to our understanding of the multifaceted leadership concept, but do not necessarily disconfirm prior research on leader-group relations (which may also be cross-situationally specific) and leader-subordinate dyads. What has been disconfirmed is the assumption that once a leader-subordinate dyad has been formed, the leader behaviors, and subordinate performance and leader attributions, are consistent, at least from the perspective of the leader. The results of this study indicated clearly that they are not. This must not be construed to mean that leader-subordinate dyads have been rejected, nor even that general behavioral dispositions exist within the dyads (see below). Rather, our point is that cross-situational specificity occurs in dyadic interactions and that our understanding, and explanation, of leadership is enhanced if we consider this additional aspect of leadership.

Correspondence with Other Studies of Cross-Situational Consistency

Arguments similar to the above have been presented for other behaviors in studies inspired by interactional theory (cf. Magnusson & Endler, 1977; Epstein, 1979). To illustrate, Magnusson and Endler (1977) reviewed three meanings of

the term "consistency". The first meaning is "absolute consistency", which, in effect, is demonstrated if an individual, or individuals, display the same level of a behavior across similar and, most importantly, dissimilar situations. Absolute consistency was generally rejected in this study in the tests of level (means). "Relative consistency" occurs if the rank order among individuals on a behavior or behaviors is stable over similar and, again most importantly, dissimilar situations. Relative consistency was rejected here in the tests of rank order. It was also rejected in the tests of homogeneity of regression equations, which may be viewed as tests of the relative consistency of the correlates of a behavior or behaviors.

Finally, Magnusson and Endler (1977, p. 7) used the term "coherence" to refer to "behavior that is inherently lawful and hence predictable without necessarily being stable in either absolute or relative terms... ." Magnusson and Endler were referring here to behavioral dispositions or patterns that are coherent and lawful even though they may vary across situations. Epstein (1979, 1980) made similar points; he argued that behavior could vary as function of situations, and yet there could still be broad, stable, behavioral dispositions that have an underlying, consistent thread over diverse situations. He argued further that the study of consistency of behavior and coherence of behavior represent different problems, each of which could be right (or wrong). For example, he suggested that "for certain purposes it is important to predict behavior of people with certain attributes in situations with certain attributes; for other purposes it is important to predict a person's behavior over a sample of situations..." (1979, p. 1104). The former concern is similar to our objective of testing cross-situational consistency in subordinate performance, attributions and leader behaviors, whereas the latter concern is similar to Magnusson and Endler's description of coherence.

The term "coherence" appears also to apply to prior leadership studies because the authors of these studies have generally assumed, either explicitly (Dansereau et al., 1975; Davis & Luthans, 1979; Zahn & Wolf, 1981) or implicitly (use of factorial rather than repeated measures designs), that leaders and subordinates have broad, stable predispositions to behave in particular ways across diverse situations. It must also be acknowledged that these studies demonstrate significant statistical results that conform to theoretical predictions, such as that leaders generally behave differently toward "in group" subordinates that toward "out group" subordinates. (A similar set of results were found here in relation to best and poorest performers--cf. Table 7). Yet, we have shown that managers' perceptions of leader behaviors, as well as subordinate performance and attributions, are neither absolutely consistent nor relatively consistent. These results provide a form of confirmation for prior experimental research which has also argued for cross-situational specificity in leadership (Barrow, 1976; Herold, 1977; Hill, 1973; Hill & Hughes, 1974). More importantly, it argues that if we wish to go beyond coherence and increase our understanding of leadership in different conditions, then, as discussed earlier, we need to address the question of cross-situational specificity. In particular, we need to view the occurrence of leader behaviors, the correlates of leader behaviors, and the effects of leader behaviors as a function not only of the type of subordinate, but also as a function of the environmental context in which leadership takes place. Some implications of this recommendation are discussed below.

Implications of Research on Cross-Situational Specificity

Cross-situational specificity has rather interesting implications for future research and development in areas such as leadership, performance evaluation, and attribution inasmuch as it points to new approaches to old problems. For

example, much has been said recently about cognitive/perceptual errors in climate perceptions, of which leadership is an important component (James et al., 1978; James & Sells, 1981), in implicit leadership theories (cf. Eden & Leviatan, 1975; Larson, 1982; Lord, Binning, Rush, & Thomas, 1978; Mitchell, Larson, & Green, 1977; Phillips & Lord, 1981; Rush, Phillips, & Lord, 1981), and in performance evaluation (Cooper, 1981a, 1981b; Feldman, 1981; Landy & Farr, 1980). It may be possible to reduce errors in cognitive information processing, long-term memory, and recall by measuring such things as performance, attributions, and leader behaviors in each of a set of diverse work situations. This stands in contrast to the traditional approach of collecting only one set of molar evaluations and perceptions, which requires that perceivers synthesize, abstract, and cognitively aggregate potentially inconsistent information from diverse work situations. We suggest that it will be possible to reduce cognitive/perceptual errors in information processing by identifying different as well as important situational contexts that the same leaders and subordinates experience as part of their roles. One example would be to develop a typology of stress situations (cf. Sells, 1973). Next, instruments would need to be developed to measure attributes such as leadership, performance and attributions (or role expectations, job characteristics, group interactions, reward processes, communication processes, attitudes, and so forth) in each situational context. This procedure should ease the cognitive burden on respondents because they would now be able to deal with occurrences of such things as behaviors in quantitative overload conditions rather than having to synthesize and cognitively aggregate information over quantitative overload, qualitative overload, and underload conditions, where the behaviors of a particular individual could differ significantly. Moreover, if the data in this study are an indication, then the data for each situational context should be reliable. Reliability can be enhanced by ensuring that multiple occurrences of an attribute (attitude,

behavior) have taken place in each situation. Given that these attributes are consistent, it is possible to capitalize on the Epstein (1979, 1980) logic that reliability is increased by aggregating, only here we would aggregate over the same or similar levels of an attribute for each of a set of the same or similar situations. Thus, in contrast to Epstein, one would still have the opportunity to make comparisons among different situations.

In summary, the present study has a number of implications of a pragmatic nature as well as a theoretical nature. The discussion above concerning reduction in errors in cognitive information processing by studying attributes within each of a set of diverse situations stimulated the final argument to be discussed in this paper. This argument is that the results of the present research can be attributed to the respondents' implicit theories relating subordinate performance to attributions and perceived leader behaviors.

Implicit Theories -- A Possible Alternative Explanation

The concept of implicit theories is rapidly assuming a position of prominence in industrial-organizational psychology (see prior references), and has been the subject of heated debate in leadership and performance evaluation (cf. DeNisi & Pritchard, 1978; Weiss & Adler, 1981; Wendelken & Inn, 1981). The implicit leadership theorists have argued that the factor structures underlying responses to leadership items are more reflective of individuals' schemas (beliefs, cognitive constructs), and relations among schemas, than of relations among actual leader behaviors. This argument has been shown to be at least partly specious by DeNisi and Pritchard (1978) and Weiss and Adler (1981). A more important argument is that once respondents are aware of performance, then implicit theories regarding the causes of performance determine responses to leadership items, regardless of the actual behaviors of a leader. The research supporting this view has been conducted in laboratory settings, where, for example, students observe films of leader-group interactions, are then fed bogus information

about the performance of the group, and finally are asked to describe the leader's behaviors. The bogus performance information, rather than the presumably observed behaviors of the leader, has the major influence on the leader descriptions.

The experimental design of the present study was different than that of the typical implicit leadership study, but the logic transfers. That is, one could argue that once the Navy managers had rated the performance of their subordinates (the initial measurements in this study), their response to the attribution and leader behavior items were determined by their implicit theories (i.e., beliefs) that related subordinate performance, attributions, and their leader behaviors. It follows directly that similar (i.e., nonsignificantly different) ratings of subordinate performance should result in similar ratings of attributions and leader behaviors if implicit theories determined the results of this study. We put this logic to the test by comparing the data for the best-lowest condition with those of the poorest-highest condition, using independent group t-tests. As shown in Table 11, the performance ratings for these two conditions were not significantly different. However, in contrast to a hypothesis based on implicit theory, 12 of the 18 tests for attributions and leader behaviors were significant, most beyond the .01 level of nonsignificance. (The Type I error rate was not protected since the pattern of significant differences obviated an explanation based on chance results.) These data suggest clearly that the results of this study cannot be explained away solely on the basis of the managers' implicit theories.

Insert Table 11 about here

It must be noted, however, that the data in Table 11 do not prove that the managers' reports of their leader behaviors were in fact veridical descriptions

of actual behaviors. Independent tests of veridicality were not made in this study. Nevertheless, the results in Table 11 and other aspects of the design suggest that at least some variance in the managers' descriptions of leader behaviors were a function of "controlled" rather than "automatic" information processing. This is important because implicit theories would be more likely to occur in automatic processing, whereas more attention should be given to actual behaviors in controlled processing (cf. Schneider & Shiffrin, 1977; Smith & Miller, 1978). One reason for assuming at least some controlled processing is that the questionnaire was built by Navy managers for Navy managers, which implies that the respondents were able to relate the items to familiar behaviors. A second reason is that in responding to the questionnaire, behaviors were related to specific stress situations rather than relying on global abstractions and cognitive aggregates over many situations (cf. Phillips & Lord, 1981). As discussed earlier, this procedure should have enhanced cognitive associations between actual behaviors and questionnaire items. Moreover, on the average the managers had worked with the subordinates for periods greater than six months, which should have reduced uncertainty and ambiguity in perception, and therefore reliance on existing schemas rather than information gained as a function of experience (cf. James et al., 1978). That is to say, beliefs developed on the basis of experiences with the subordinates a manager chose as his/her best and poorest performers should have reduced reliance on general beliefs about subordinates that the manager may have developed prior to his/her present assignment. Finally, the leaders were not passive observers, but were required to take action, namely to lead. Here again, requirements for action should have resulted in controlled information processing, such as observing the results (feedback) of leader behaviors on subordinate performance, and less reliance on existing beliefs and purely automatic information processing (cf. James et al., 1978; Jones & Gerard, 1967).

In sum, there are many salient reasons why implicit theory does not serve as an alternative explanation for the results of this study. We do not wish to imply that implicit theories were absent; it is generally assumed that learned beliefs and relations among beliefs enter into the perceptual aspects of cognition (James et al., 1978). Nevertheless, it is one thing to recognize the influence of prior learning and quite another to say that new learning, in the form of controlled information processing and accommodation of (i.e., change in) beliefs to new events, does not occur in perception. Yet this is what the implicit leadership theorists would like us to believe. Our reply is that it is time to bring the implicit research out of the laboratory and put it to the test in naturalistic settings with real leaders and subordinates who, among other things, have the opportunity to observe feedback based on prior behaviors, and must take action based on their perceptions. While it is quite likely that existing predispositions will influence perceptions, it is also likely that perceptions will be influenced by actual situational events (James et al., 1979, 1981).

Conclusions

This study was exploratory in the sense that our objective was to begin to construct a theory of cross-situational specificity rather than to provide a confirmatory test of a well-developed theoretical model. For example, the leader-subordinate dyadic interaction model that served as one theoretical base for this investigation is a structural model involving reciprocal causation between leader and subordinate behaviors (James, 1981). The addition of attributions to this model presumes a causal ordering among variables, namely subordinate performance → leader attributions → leader behavior → subordinate performance, and so forth. However, no attempt was made in this study to

operationalize a reciprocal causation structural model or to furnish a conclusive test of causal order. Nevertheless, the study did furnish a preliminary test of the cross-situational specificity hypothesis and should provide a basis for furture theoretical development and confirmatory models in which tests of reciprocal causation and alternative causal orderings are possible (cf. James, Mulaik, Brett, in press). Also, whereas the present study focused only on the perceptions of managers, future research needs to address the perceptions of others (subordinates, observers). Finally, implications of the reserach for reducing errors in cognitive processing were presented earlier. We wish to reinforce this point and to note that if future research confirms cross-situational specificity, then attention needs to be given to changes in such things as present day training and development programs for leaders. For example, some such programs are predicated on the belief that leaders' general behavioral dispositions and styles are not malleable (Fiedler & Mahar, 1979a, 1979b). The results reported here suggest otherwise, one reason being that the behaviors of a particular leader appear to change naturally as a function of both the situation and the individual supervised.

References

Barrow, J. C. Worker performance and task complexity as causal determinants of leader behavior style and flexibility. Journal of Applied Psychology, 1976, 61, 433-440.

Bass, B. Stogdill's handbook of leadership: A survey of theory and research. New York: Free Press, 1981.

Beehr, T. A., & Newman, J.E. Job stress, employee health, and organizational effectiveness: A facet analysis, model, and literature review. Personnel Psychology, 1978, 31, 665-699.

Bem, D. J., & Allen, A. On predicting some of the people some of the time: The search for cross-situational consistencies in behavior. Psychological Review, 1974, 81, 506-520.

Block, J. Advancing the psychology of personality: Paradigmatic shift or improving the quality of research. In D. Magnusson & N.S. Endler (Eds.), Personality at the crossroads: Current issues in interactional psychology. Hillsdale, NJ: Lawrence Erlbaum, 1977.

Cashman, J., Dansereau, F., Jr., Graen, G., & Haga, W.J. Organizational understructure and leadership: A longitudinal investigation of the managerial role-making process. Organizational Behavior and Human Performance, 1976, 15, 278-296.

Cooper, W. H. Conceptual similarity as a source of illusory halo in job performance ratings. Journal of Applied Psychology, 1981, 66, 302-307. (a)

Cooper, W. H. Ubiquitous halo. Psychological Bulletin, 1981, 90, 218-244. (b)

Dansereau, F., Jr., Graen, G., & Haga, W. J. A vertical dyad linkage approach to leadership within formal organizations: A longitudinal investigation of the role making process. Organizational Behavior and Human Performance, 1975, 13, 46-78.

Davis, T., & Luthans, F. Leadership reexamined: A behavioral approach. Academy of Management Review, 1979, 4, 237-248.

DeNisi, A.S., & Pritchard, R. D. Implicit theories of performance as artifacts in survey research: A replication and extension. Organizational Behavior and Human Performance, 1978, 21, 358-366.

Eden, D., & Leviatan, U. Implicit leadership theory as a determinant of the factor structure underlying supervisory behavior scales. Journal of Applied Psychology, 1975, 60, 736-741.

Endler, N. S., & Magnusson, D. Toward an interactional psychology of personality. Psychological Bulletin, 1976, 83, 956-974.

Epstein, S. The stability of behavior: I. On predicting most of the people much of the time. Journal of Personality and Social Psychology, 1979, 37, 1097-1126.

Epstein, S. The stability of behavior: II. Implications for psychological research. American Psychologist, 1980, 35, 790-806.

Feldman, J.M. Beyond attribution theory: Cognitive processes in performance appraisal. Journal of Applied Psychology, 1981, 66, 127-148.

Fiedler, F.E., & Mahar, L. A field experiment validating contingency model leadership training. Journal of Applied Psychology, 1979, 64, 247-254. (a)

Fiedler, F.E., & Mahar, L. The effectiveness of contingency model training: A review of the validation of leader match. Personnel Psychology, 1979, 32, 45-62. (b)

Goodstadt, B., & Kipnis, D. Situational influences on the use of power. Journal of Applied Psychology, 1970, 54, 201-207.

Gordon, R. Issues in multiple regression. American Journal of Sociology, 1968, 73, 592-616.

Graen, G. Role making processes within complex organizations. In M.D. Dunnette (Ed.), Handbook of Industrial and Organizational Psychology. Chicago: Rand McNally, 1976.

Graen, G., & Ginsburgh, S. Job resignation as a function of role orientation and leader acceptance: A longitudinal investigation of organizational assimilation. Organizational Behavior and Human Performance, 1977, 19, 1-17.

Graen, G., & Schiemann, W. Leader-member agreement: A vertical dyad linkage approach. Journal of Applied Psychology, 1978, 63, 206-212.

Green, S. G., & Liden, R. C. Contextual and attributional influences on control decisions. Journal of Applied Psychology, 1980, 65, 455-458.

Green, S. G., & Mitchell, T.R. Attributional processes of leaders in leader-member interactions. Organizational Behavior and Human Performance, 1979, 23, 429-458.

Greene, C. N. The reciprocal nature of influence between leader and subordinate. Journal of Applied Psychology, 1975, 60, 187-193.

Greene, C.N., & Schriesheim, C.A. Leader-group interactions: A longitudinal field investigation. Journal of Applied Psychology, 1980, 65, 50-60.

Hackman, J.R., & Oldham, G.R. Development of the job diagnostic survey. Journal of Applied Psychology, 1975, 60, 159-170.

Hackman, J. R., & Oldham, G. R. Motivation through the design of work: Test of a theory. Organizational Behavior and Human Performance, 1976, 16, 250-279.

Herold, D. M. Two-way influence process in leader-follower dyads. Academy of Management Journal, 1977, 20, 224-237.

Hill, W. A. Leadership style: Rigid or flexible? Organizational Behavior and Human Performance, 1973, 9, 35-47.

Hill, W. A., & Hughes, D. Variations in leader behavior as a function of task type. Organizational Behavior and Human Performance, 1974, 11, 83-96.

Hollander, E. P., & Julian, J. W. Contemporary trends in the analysis of leadership processes. Psychological Bulletin, 1969, 71, 387-397.

Ilgen, D. R., & Knowlton, W. A., Jr. Performance attributional effects on feedback from superiors. Organizational Behavior and Human Performance, 1980, 25, 441-456.

Ilgen, D. R., Mitchell, T. R., & Fredrickson, J. W. Poor performers: Supervisors' and subordinates' responses. Organizational Behavior and Human Performance, 1981, 27, 386-416.

James, L. R. A test for asymmetric relationships between two reciprocally related variables. Multivariate Behavioral Research, 1981, 16, 63-82.

James, L. R. Aggregation bias in estimates of perceptual agreement. Journal of Applied Psychology, 1982, 67, 219-229.

James, L. R., Gent, M. J., Hater, J. J., & Coray, K. E. Correlates of psychological influence: An illustration of the psychological climate approach to work environment perceptions. Personnel Psychology, 1979, 32, 563-588.

James, L. R., Hater, J. J., Gent, M. J., & Bruni, J. R. Psychological climate: Implications from cognitive social learning theory and interactional psychology. Personnel Psychology, 1978, 31, 781-813.

James, L. R., Hater, J. J., & Jones, A. Perceptions of psychological influence: A cognitive information processing approach for explaining moderated relationships. Personnel Psychology, 1981, 34, 453-477.

James, L. R., Joe, G. W., & Irons, D. M. A multivariate test for sequential moderation. Educational and Psychological Measurement, in press.

James, L. R., & Jones, A. P. Organizational structure: A review of structural dimensions and their conceptual relationships with attitudes and behavior. Organizational Behavior and Human Performance, 1976, 16, 74-113.

James, L. R., Mulaik, S. A., & Brett, J. M. Conditions for confirmatory analysis and causal inference. Beverly Hills: Sage, in press (1982).

Johnston, J. J. Econometric methods (2nd Ed.). New York: McGraw-Hill, 1972.

Jones, A. P., & James, L. R. Psychological climate: Dimensions and relationships of individual and aggregated work environment perceptions. Organizational Behavior and Human Performance, 1979, 23, 201-250.

Jones, E. E. The rocky road from acts to dispositions. American Psychologist, 1979, 34, 107-117.

Jones, E. E., & Gerard, H. B. Foundations of social psychology. New York: Wiley, 1967.

Katerberg, R., & Hom, P. W. Effects of within-group and between-groups variation in leadership. Journal of Applied Psychology, 1981, 66, 218-225.

Katz, D., & Kahn, R. L. The social psychology of organizations (2nd ed.). New York: Wiley, 1978.

Katz, R. The influence of group conflict on leadership effectiveness. Organizational Behavior and Human Performance, 1977, 20, 265-286.

Kelly, H. H. Attribution in social interaction. In E. Jones, D. Kanouse, H. Kelly, R. Nisbett, S. Valins, & B. Weiner (Eds.), Attribution: Perceiving the causes of behavior. Morristown, NJ: General Learning Press, 1972.

Kenrick, D. T., & Braver, S. L. Personality: Idiographic and nomothetic! A rejoinder. Psychological Review, 1982, 89, 182-186.

Kenrick, D. T., & Stringfield, D. O. Personality traits and the eye of the beholder: Crossing some traditional philosophical boundaries in the search for consistency of all of the people. Psychological Review, 1980, 87, 88-104.

Kerr, S., & Schriesheim, C. Consideration, initiating structure, and organizational criteria - an update of Korman's 1966 review. Personnel Psychology, 1974, 27, 555-568.

Kipnis, D. The powerholders. Chicago: University of Chicago Press, 1976.

Kipnis, D., & Cosentino, J. Use of leadership powers in industry. Journal of Applied Psychology, 1969, 53, 460-466.

Kipnis, D., Silverman, A., & Copeland, C. Effects of emotional arousal on the use of supervised coercion with black and union employees. Journal of Applied Psychology, 1973, 57, 38-43.

Knight, P. A., & Weiss, H. M. Effects of selection agent and leader origin on leader influence and group member perceptions. Organizational Behavior and Human Performance, 1980, 26, 7-21.

Knowlton, W. A., Jr., & Mitchell, T. R. Effects of causal attributions on a supervisor's evaluation of subordinate performance. Journal of Applied Psychology, 1980, 65, 459-466.

Landy, F. J., & Farr, J. L. Performance ratings. Psychological Bulletin, 1980, 87, 72-107.

Larson, J. P. Cognitive mechanisms mediating the impact of implicit theories of leader behavior on leader behavior ratings. Organizational Behavior and Human Performance, 1982, 29, 129-140.

Lord, F. M., & Novick, M. R. Statistical theories of mental test scores. Reading, MA: Addison-Wesley, 1968.

Lord, R. G. Group performance as a function of leadership behavior and task structure: Toward an explanatory theory. Organizational Behavior and Human Performance, 1976, 17, 76-96.

Lord, R. G., Binning, J. R., Rush, M. C., & Thomas, J. C. The effects of performance cues and leader bheavior on questionnaire ratings of leadership behavior. Organizational Behavior and Human Performance, 1978, 21, 419-433.

Lord, R. G., & Rowzee, M. Task interdependence, temporal phase, and cognitive heterogeneity as determinants of leadership behavior and behavior performance relations. Organizational Behavior and Human Performance, 1979, 28, 182-200.

Magnusson, D., & Endler, N.S. Interactional psychology: Present status and future prospects. In D. Magnusson & N. S. Endler (Eds.), Personality at the crossroad: Current issues in interactional psychology. Hillsdale, NJ: Lawrence Erlbaum, 1977.

McFillen, J. M. Supervisory power as an influence in supervisor-subordinate relations. Academy of Management Journal, 1978, 21, 27-39.

McGrath, J. E. Stress and behavior in organizations. In M. Dunnette (Ed.), Handbook of industrial and organizational psychology. Chicago: Rand-McNally, 1976.

Mischel, W. Toward a cognitive social learning reconceptualization of personality. Psychological Review, 1973, 80, 252-283.

Mitchell, T. R., & Kalb, L. S. Effects of outcome knowledge and outcome valence on supervisors' evaluations. Journal of Applied Psychology, 1981, 66, 604-612.

Mitchell, T. R., Larson, J. R., & Green, S. G. Leader behavior, situational moderators, and group performance: An attributation analysis. Organizational Behavior and Human Performance, 1977, 18, 254-268.

Mitchell, T. R., & Wood, R. E. Supervisor's responses to subordinate poor performance: A test of an attributional model. Organizational Behavior and Human Performance, 1980, 25, 123-138.

Newman, J. E. Understanding the organizational structure - job attitude relationship through perceptions of the work environment. Organizational Behavior and Human Performance, 1975, 14, 371-397.

Nisbett, R. E., & Wilson, T. D. Telling more than we can know: Verbal reports on mental processes. Psychological Review, 1977, 84, 231-259.

Phillips, J. S., & Lord, R. G. Causal attributions and perceptions of leadership. Organizational Behavior and Human Performance, 1981, 28, 143-163.

Rosen, B., & Jerdee, T. H. Factors influencing disciplinary judgments. Journal of Applied Psychology, 1974, 3, 327-331.

Ross, L. The intuitive psychologist and his shortcomings: Distortions in the attribution process. In L. Berkowitz (Ed.), Advances in experimental and social psychology. New York: Academic Press, 1977.

Rush, M. C., Phillips, J. S., & Lord, R. G. The effects of a temporal delay in rating on leader behavior descriptions: A laboratory investigation. Journal of Applied Psychology, 1981, 66, 442-450.

Rushton, J. P., Jackson, D. N., & Paunonen, S. V. Personality: Nomothetic or idiographic? A response to Kenrick & Stringfield. Psychological Review, 1981, 88, 582-589.

Schneider, W., & Shiffrin, R. M. Controlled and automatic human information processing: I. Detection, search, and attention. Psychological Review, 1977, 84, 1-66.

Schriesheim, C. A., & Stogdill, R. M. Differences in factor structure across three versions of the Ohio State Leadership Scales. Personnel Psychology, 1975, 28, 189-206.

Schuler, R. S. Definition and conceptualization of stress in organizations. Organizational Behavior and Human Performance, 1980, 25, 184-315.

Sells, S. B. Prescriptions for a multivariate model in personality and psychological theory: Ecological considerations. In J. R. Royce (Ed.), Multivariate analysis and psychological theory. New York: Academic Press, 1973.

Sims, H. P. The leader as a manager of reinforcement contingencies: An empirical example and a model. In J. G. Hunt & L. L. Larson (Eds.), Leadership: The cutting edge. Carbondale, Ill.: Southern Illinois University Press, 1977.

Smith, E. R., & Miller, F. D. Limits on perception of cognitive processes: A reply to Nisbett and Wilson. Psychological Review, 1978, 85, 355-362.

Stagner, R. Traits are relevant: Theoretical analysis and empirical evidence. In N. S. Endler & D. Magnusson (Eds.), Interactional psychology and personality. New York: Wiley, 1976.

Stagner, R. On the reality and relevance of traits. The Journal of General Psychology, 1977, 96, 185-207.

Timm, N. H. Multivariate analysis with applications in education and psychology. Monterey, CA: Brooks/Cole, 1975.

Vroom, V. H. Some personality determinants of the effects of participation. Englewood Cliffs, NJ: Prentice-Hall, 1960.

Weiner, B. A theory of motivation of some classroom experiences. Journal of Educational Psychology, 1979, 71, 3-25.

Weiss, H. M., & Adler, S. Cognitive complexity and the structure of implicit leadership theories. Journal of Applied Psychology, 1981, 66, 69-78.

Wendelken, D. J., & Inn, A. Nonperformance influences on performance evaluations: A laboratory phenomenon? Journal of Applied Psychology, 1981, 66, 149-158.

Werts, C. E., & Linn, R. L. Considerations when making inferences within the analysis of covariance model. Educational and Psychological Measurement, 1971, 31, 407-416.

Zahn, G. L., & Wolf, G. Leadership and the art of cycle maintenance: A simulation model of superior-subordinate interaction. Organizational Behavior and Human Performance, 1981, 28, 26-49.

Footnotes

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Table 1

Seven Categories of Stress Situations for Navy Managers

1. TIME OVERLOAD: This category refers to situations where the subordinate and his/her people had the skills and training to complete tasks assigned to you. However, there was strong pressure from the command on you to get the job done by a time deadline. The time they gave to complete the tasks was too short.

2. TASK DIFFICULTY: This category refers to situations where the subordinate had enough time to complete tasks in his/her area of responsibility. However, the tasks were very difficult. For example, the subordinate had to rely on people who lacked adequate training, qualifications, and experience for these difficult tasks.

3. UNDERLOAD: This category refers to situations where few demands were made on the subordinate, such as a stand-down condition. The tasks assigned to the subordinate required few skills and little training. In fact, the tasks were boring, and it was difficult for the subordinate to keep his/her people motivated.

4. PROBLEMS WITH PERSONNEL: This category refers to situations where a personnel problem occurred in the subordinate's workgroup. For example, conflicts occurred among work-group members, or one or more subordinates were consistently late for work, did not show proper respect for authority, or were using illegal drugs. Action was required to solve the problem without hurting the morale or performance of the rest of the group members.

5. EVALUATION STRESS: This category refers to situations where your command was being evaluated; for example, a formal Administrative and Material Inspection, and Operational Readiness Evaluation, or other high visibility operations. The performance of the subordinate had a direct effect on how the command was evaluated. The subordinate was under high stress to perform well and look good.

6. PHYSICAL STRESS: This category refers to situations where the suborindate had to perform tasks that required him/her and his/her people to work around the clock for several days. As a result, they had to work long hours without adequate rest or sleep. Signs of fatigue were showing.

7. EMERGENCIES: This category refers to situations where actual emergencies took place. The subordinate had to be relied upon to complete assigned duties and to maintain a firm presence of mind.

Table 2

Navy Managers' Attributions of the Causes of a Subordinate's Performance

	Internal		External	
Controllability	Stable	Unstable	Stable	Unstable
Uncontrollable	Subordinate's Competence	Subordinate's Attitude	Task Difficulty	Resources Time Available to Complete Tasks
Controllable	Subordinate's Leadership Skills	Subordinate's Effort	Your Contributions as a Supervisor	

Table 3

Percentage of Subordinates From Each Condition

in High and Low Pressure Situations

Condition	High Pressure Situations	Low Pressure Situations
1. Best-Highest	96%	04%
2. Best-Lowest	66	34
3. Poorest-Highest	60	40
4. Poorest-Lowest	80	20

Note. n = 377 in each condition.

Table 4

Correlations Between Repeated Measures on Performance, Attributions, and Leader Behaviors for the Best Performers and Poorest Performers

Variable	Correlations: Best-Highest(1) with Best-Lowest(2)[a]	Poorest-Highest(3) with Poorest-Lowest(4)[a]	1 and 3 with 2 and 4[b]
Subordinate Performance	.31	.35	.63
Attributions			
Subordinate Competence	.32	.53	.54
Subordinate Attitude	.40	.43	.60
Subordinate Leadership Skills	.37	.61	.61
Subordinate Effort	.22	.35	.51
Task Difficulty	.41	.46	.47
Resources	.44	.61	.51
Time to Complete Tasks	.31	.36	.34
Supervisor Contributions	.20	.48	.35
Leader Behaviors			
Act on Own	.48	.67	.61
Seek Opinion	.41	.66	.55
Use Rewards	.63	.76[c]	.69
Use Praise	.48	.62	.56
Reasons for Performance	.59	.70[c]	.64
Improve Performance	.46	.61	.56
Monitor	.25	.49	.45
Orally Reprimand	.49	.51	.57
Explain Orders	.71[c]	.77[c]	.74[c]
Reassign	.59	.70[c]	.64

Note. Numbers in parentheses designate conditions.

[a] $n = 377$

[b] $n = 754$

[c] $r \geq .70$

Table 5

Standard Deviations for Performance, Attributions, and Leader Behaviors in Four Conditions and on Combined Samples

Variable	Best-Highest(1)[a]	Best-Lowest(2)[a]	Poorest-Highest(3)[a]	Poorest-Lowest(4)[a]	Combined Samples 1 and 3[b]	Combined Samples 2 and 4[b]
Subordinate Performance	.70	.91	1.11	.85	1.31	1.18
Attributions						
Subordinate Competence	.68	.92	1.04	1.00	1.03	1.03
Subordinate Attitude	.70	1.14	1.25	.96	1.36	1.24
Subordinate Leadership Skills	.78	.89	.93	.91	1.09	.99
Subordinate Effort	.57	.92	1.16	1.03	1.15	1.13
Task Difficulty	.93	.93	.86	.86	.97	.91
Resources	1.14	.99	.96	.94	1.06	.97
Time to Complete Tasks	1.16	.91	.95	.92	1.06	.92
Supervisor Contributions	.62	.79	.69	.75	.67	.78
Leader Behaviors						
Act on Own	.90	1.15	1.05	1.18	1.06	1.20
Seek Opinion	1.03	1.13	1.10	1.20	1.15	1.18
Use Rewards	1.30	1.20	1.19	1.20	1.25	1.20
Use Praise	1.02	1.11	1.05	1.14	1.06	1.13
Reasons for Performance	1.15	1.07	1.15	1.11	1.17	1.12
Monitor	1.00	1.06	1.07	1.06	1.10	1.14
Orally Reprimand	1.04	1.07	1.33	1.24	1.28	1.27
Explain Orders	1.17	1.16	1.24	1.24	1.21	1.21
Reassign	1.41	1.24	1.29	1.29	1.35	1.28

Note. Numbers in parentheses designate conditions

[a] $n = 377$

[b] $n = 754$

Table 6

Correlated Tests of Means on Performance, Attributions, and Leader Behaviors

A. Multivariate Tests

Variable	Contrasts	Hotelling Correlated T^2
Attributions	Best-Highest vs. Best-Lowest	1,252.21*
Attributions	Poorest-Highest vs. Poorest-Lowest	469.40*
Leader Behaviors	Best-Highest vs. Best-Lowest	519.66*
Leader Behaviors	Poorest-Highest vs. Poorest-Lowest	348.12*

B. Univariate Tests

	Mean		Correlated	Mean		Correlated
Variable	Best-Highest	Best-Lowest	t	Poorest-Highest	Poorest-Lowest	t
Subordinate Performance	4.95	3.22	34.11*	3.11	1.69	24.19*
Attributions						
Internal:						
Subordinate Competence	1.41	.32	22.14*	.33	-.41	14.54*
Subordinate Attitude	1.42	.16	22.70*	-.39	-1.14	12.13*
Subordinate Leadership Skills	.99	.16	16.89*	-.35	-.66	7.44*
Subordinate Effort	1.55	.12	28.61*	.15	-1.03	18.27*
External:						
Task Difficulty	.78	-.06	16.14*	.01	-.42	9.23*
Resources	.38	-.21	10.07*	.20	-.10	6.93*
Time to Complete Tasks	.33	-.18	2.98*	.09	-.36	8.22*
Supervisor Contributions	1.01	.62	8.38*	.74	.52	5.73*
Leadership						
Opportunity for Influence:						
Act on Own	4.08	3.56	9.42*	3.31	3.02	6.18*
Seek Opinion	3.29	2.61	11.12*	2.40	2.25	2.96*
Reward Power:						
Use Rewards	2.71	2.24	8.32*	2.48	2.28	4.68*
Use Praise	3.58	3.12	8.12*	3.17	2.91	5.27*
Persuasive Power:						
Reasons for Performance	2.99	3.03	-.71	3.40	3.60	-3.50*
Improve Performance	2.77	3.08	-4.92*	3.38	3.70	-6.01*
Coercive Power:						
Monitor	2.78	2.95	-2.54	3.55	3.78	-4.22*
Orally Reprimand	1.84	2.20	-6.48*	2.74	3.21	-7.25*
Consideration:						
Explain Orders	3.06	2.99	1.41	3.03	3.10	-1.66
Assignment						
Reassign	2.75	2.45	4.72*	2.95	2.85	1.44

* $p < .005$

Table 7

Independent Groups Tests of Means on Performance, Attributions, and Leader Behaviors

A. Multivariate Tests

Variable	Contrasts	Hotelling T^2
Attributions	Best-Highest vs. Poorest-Highest	818.58*
Attributions	Best-Lowest vs. Poorest-Lowest	401.20*
Leader Behaviors	Best-Highest vs. Poorest-Highest	401.37*
Leader Behaviors	Best-Lowest vs. Poorest-Lowest	276.71*

B. Univariate Tests

Variable	t test Best-Highest vs. Poorest-Highest	t test Best-Lowest vs. Poorest-Lowest
Subordinate Performance	27.11*	23.32*
Attributions		
Internal:		
Subordinate Competence	17.00*	10.43*
Subordinate Attitude	24.47*	16.85*
Subordinate Leadership Skills	21.38*	12.44*
Subordinate Effort	21.17*	16.11*
External:		
Task Difficulty	11.86*	5.52*
Resources	2.26	-1.54
Time to Complete Tasks	3.21*	2.76
Supervisor Contributions	5.61*	1.71
Leadership		
Opportunity for Influence:		
Act on Own	10.87*	6.42*
Seek Opinion	11.52*	4.23*
Reward Power:		
Use Rewards	2.48	-.46
Use Praise	5.43*	2.60
Persuasive Power:		
Reasons for Performance	-4.90*	-6.99*
Improve Performance	-6.98*	-7.77*
Coercive Power:		
Monitor	-10.13*	-10.63*
Orally Reprimand	-10.33*	-12.01*
Consideration:		
Explain Orders	.33	-1.18
Assignment:		
Reassign	-1.76	-4.19*

*$p < .005$

Table 8

Correlations Among Leader Behaviors and Predictors of Leader Behaviors in the Highest and Lowest Performance Conditions

Predictors	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Internal Attributions		37[a]	17	12	23	68	09	13	-21	29	14	-40	-01	-13
2. Task Difficulty	47[a]		33	29	17	29	05	-02	-12	16	19	-09	03	-01
3. Resources	20	32		39	22	04	02	-01	-05	02	08	-01	01	05
4. Time	23	29	44		14	06	05	05	-10	07	05	-04	04	06
5. Supervisory Contribution	27	16	17	17		14	06	03	02	18	29	17	14	15
6. Subordinate Performance	78	39	14	14	22		04	08	-20	26	13	-41	-02	-15
7. Tenure	04	05	06	03	06	07		17	-06	17	10	07	10	-01
8. Level	09	01	-01	03	-09	09	17		-04	16	02	-06	02	-09
9. Pressure	49	29	04	-02	13	45	07	01		-10	05	24	-02	11
Leader Behaviors														
10. Opportunity for Influence	47	26	05	11	15	47	14	11	32		39	12	37	12
11. Reward Power	19	15	09	09	26	20	12	-03	14	39		29	37	37
12. Control	-42	-23	-03	-04	11	-40	13	-08	-22	-01	30		33	42
13. Explain	03	-01	07	03	05	04	09	04	03	36	38	34		27
14. Reassign	-13	-01	07	04	16	-13	01	-17	-08	06	31	44	21	

Note. $n = 754$, $p < .05 = .07$; correlations below the diagonal are for the Highest Performance condition; correlations above the diagonal are for the Lowest Performance condition.

[a]Decimal points omitted.

Table 9

Unstandardized Regression Weights and Multiple Correlations for Predictions of Leader Behaviors in the Highest and Lowest Performance Conditions

Predictors	Leader Behaviors: Influence Power HP[a]	Influence Power LP[a]	Reward HP	Reward LP	Control HP	Control LP	Explain HP	Explain LP	Reassign HP	Reassign LP
1. Internal Attributions	.118*	.088*	.006	-.004	-.315*	-.335*	-.005	-.015	-.056	-.036
External Attributions:										
2. Task Difficulty	.114	.128	.108	.304*	-.231	.253	-.064	.044	.052	.021
3. Resources	-.134*	-.147	.007	-.038	.071	-.037	.086	-.050	.078	.016
4. Time	.044	.069*	.021	-.054	.082	-.180	-.006	.038	.024	.068
5. Supervisor Contributions	.068	.305*	.619*	.648*	1.329*	1.278*	.077	.224*	.367*	.302*
6. Subordinate Performance	.362*	.173*	.176*	.095	-.554*	-.798*	.042*	-.026	.059	-.126*
7. Tenure	.003*	.003*	.003*	.002*	.008*	.005*	.001*	.002*	.001	.001
8. Level	.025	.063*	-.026	-.003	-.040	-.025	.009	.004	-.056*	-.027*
Multiple R	.52*	.38*	.32*	.34*	.52*	.52*	.13	.18*	.29*	.26*

Note. n = 754 for all analyses

[a]HP = highest performance condition; LP = lowest performance condition.

* p < .05

Table 10

Tests of Homogeneity of Correlated Regression Weights for Five Leader Behavior Variables

Dependent Variable	Determinant Values		
	Q_E	$Q_E + Q_{Ho:}$	Λ
1. Opportunities for Influence	$.14 \times 10^{-21}$	$.14 \times 10^{-20}$	.11*
2. Reward Power	$.41 \times 10^{-21}$	$.12 \times 10^{-20}$	.33*
3. Control	$.32 \times 10^{-17}$	$.23 \times 10^{-16}$	.14*
4. Explain Orders	$.38 \times 10^{-24}$	$.20 \times 10^{-23}$	.19*
5. Reassign	$.10 \times 10^{-28}$	$.35 \times 10^{-23}$	.30*

Note. Significance tests based on the U distribution with (2, 8, 746) degrees of freedom.

* $p < .01$

Table 11

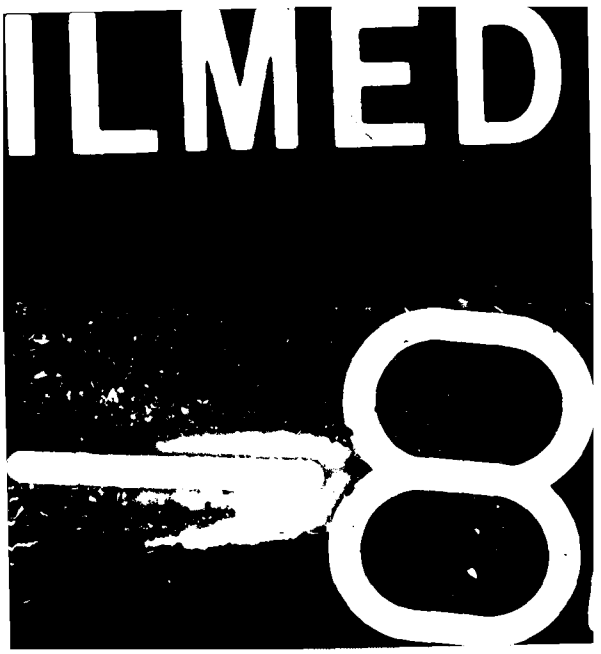
Independent Group Tests on Means for Best-Lowest Condition

Versus Poorest-Highest Condition

Variable	Means		t
	Best-Lowest	Poorest-Highest	
Subordinate Performance	3.22	3.11	1.39
Attributions			
Internal:			
Subordinate Competence	.32	.33	-1.00
Subordinate Attitude	.16	-.39	6.50**
Subordinate Leadership Skills	.16	-.35	7.44**
Subordinate Effort	.12	.15	-.74
External:			
Task Difficulty	.06	.01	.43
Resources	-.21	.20	-3.58**
Time to Complete Tasks	-.18	.09	-2.01*
Supervisor Contributions	.62	.74	-.46
Leadership			
Opportunity for Influence:			
Act on Own	3.56	3.31	3.16**
Seek Opinion	2.61	2.40	2.62**
Reward Power:			
Use Rewards	2.24	2.48	-2.74**
Use Praise	3.12	3.17	-.59
Persuasive Power:			
Reasons for Performance	3.03	3.40	-4.51**
Improve Performance	3.08	3.38	-3.61**
Coercive Power:			
Monitor	2.95	3.55	-7.68**
Orally Reprimand	2.20	2.74	-6.10**
Consideration:			
Explain Orders	2.99	3.03	-.36
Assignment:			
Reassign	2.45	2.95	-5.03**

* $p < .05$

** $p < .01$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